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NON-PROVISIONAL APPLICATION FOR LETTERS PATENT

UNITED STATES OF AMERICA

Be it known that I, **PAT INGLESE**, residing at 3961 Glenhurst Drive, Smyrna, Cobb County, Georgia 30080, a citizen of the United States of America, have invented certain new and useful improvements in a

WET (PLASTIC) AND DRY CONCRETE RECLAMATION/DISPOSAL DEVICE

of which the following is a specification:

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WET (PLASTIC) AND DRY CONCRETE RECLAMATION/DISPOSAL DEVICE

CROSS-REFERENCES TO RELATED APPLICATIONS

This application claims priority to, and the benefit of, Provisional Application No. 60/486,961, filed July 14, 2003, entitled "Wet (Plastic) And Dry Concrete Reclamation/Disposal Device".

TECHNICAL FIELD

The present invention relates generally to concrete handling equipment, and more specifically to an apparatus and method for cleaning or purging of concrete mixing, holding and pumping equipment, and reclamation or disposal of the residual concrete and like materials obtained thereby.

BACKGROUND OF THE INVENTION

There are various types of equipment that handle concrete at a job site. Among these are the mixer, typically a hopper with agitator, wherein concrete, grout and/or primers are kept fluid and then pumped or gravity-fed to the point-of-use or to other equipment that will be utilized to feed the concrete to

the point-of-use. The hopper/agitator generally includes screws or blades to facilitate such fluidizing. Concrete ready mix trucks are another piece of equipment that handle the mixing and delivery of concrete, wherein the concrete is mixed with water through rotation of a barrel and internal blades or screws.

Once mixed, concrete is generally delivered to the point-of-use. Delivery may be accomplished via the hopper or ready mix trucks as described above, or via the use of a conveyor or hose. Concrete delivered via flexible hoses or metal pipe from a pump located on a trailer or boom pump. Concrete may also be pumped to a deck placer, which has an extension boom and framework that can be transported to support locations within a building undergoing construction, for placement at a specific point on a roof or floor deck.

Most concrete mixing and handling equipment require cleaning for purposes of maintaining useable life of the equipment and for removal of residual set and unset product. Set concrete will interfere with the operation of equipment and the delivery of the concrete product by restricting and impeding movement of the flowable concrete through the

equipment. Thus, it is necessary to rinse unset concrete out of the equipment prior to the setting or hardening of the concrete because, once hardened or set, concrete is extremely difficult to remove.

When rinsing the concrete out, an excess amount of water is typically used to carry out the residual concrete and leave the equipment clean. Since concrete mixing and applying equipment is located at a construction site, there is often little or no containment for materials that are discharged either deliberately through cleaning or through spillage. Thus, some means to provide for containment of the concrete and water while being mixed or during cleaning is critical. Once the concrete has been contained in a storage device, it will set and harden. Excess concrete can be reclaimed in this manner for disposal or recycling of its component materials.

Additionally, due to environmental concerns, concrete can no longer be flushed out of ready mix trucks or pumps onto vacant land. The water used for cleaning concrete off tools and equipment may no longer run into storm sewer systems. The responsibility of cleanup and removal of this concrete falls on the ready mix supplier and/or the pump service company.

In addition to cleaning, many concrete delivery methods require the priming of the system. In this operation, the interior walls of the hose or pipe must be coated with a substance that encourages the concrete to flow to the delivery point. A priming agent consists of grout (sand, cement and water), and/or a specialized lubricant. It is usually undesirable for this priming agent to be allowed to enter the concrete pour, as its characteristics differ from the concrete to be applied. This material requires a containment apparatus to collect it, as it comes out of the tip-hose prior to the onset of actual concrete pumping. Currently, this prime is collected in jury-rigged apparatus or forms made by each contractor.

Although various devices and methods for disposal or recycling of residual concrete are known, all are disadvantageous when compared to the present invention.

For instance, United States Patent No. 3,805,535 to Van Weele teaches a method of forming a concrete post in a hole in the ground by placing a bag of water-permeable flexible material designed to block concrete and retain it in the bag.

Such a method presents disadvantages, as the concrete remains in the ground and is not recycled.

United States Patent No. 4,016,978 to Danna, Jr. teaches a concrete mixer apparatus for separation and reclamation of gravel, stones, pebbles and the like, from the concrete mixer by suspending the residual concrete in an excess of water with settling of the adjunct materials. However, such a method is disadvantageous, as the aggregates only are reclaimed and the concrete is not, it is water intensive and must be located next to a large batch plant where ready mix trucks return the unused portion of the order.

United States Patent No. 4,154,671 to Borges, United States Patent No. 6,354,439 to Arbore, United States Patent No. 6,155,277 to Barry and United States Patent No. 5,685,978 to Petrick et al. teach the use of screens or strainers to recover cement/concrete and/or aggregates left in concrete mixing and delivery trucks. However, due to the use of such screens to separate the solid materials, these methods are disadvantageous in that they require separate and additional apparatus for transportation of the concrete to be reclaimed or discarded.

United States Patent No. 5,741,065 to Bell et al. and United States Patent No. 6,039,468 to Kowalcyk teach a cleaning system for concrete mixing trucks, wherein the concrete is recycled on-board and, thus, the concrete trucks are highly specialized and disadvantageous in being unable to handle waste from other standard trucks used in the field.

While some or all of the above-referenced patents may well be utilized for reclamation of residual concrete, they do not adequately provide an on-site containment vessel without requiring a large volume for storage of unfilled, heavy and overly complicated rigid vessels. Accordingly, a device and method of containment and reclamation of concrete and related materials is desirable.

BRIEF SUMMARY OF THE INVENTION

The present invention began out of a need for a device to contain and hold excess concrete, waste primers, and the like at construction job sites and to allow for the convenient disposal or reclamation of the materials so captured.

The present invention is suitable for use as a container for the recovery, disposal, and reclamation of concrete, waste primers, and the like. The invention is a preferably box-shaped structure with suspension straps that can be attached to any of the various forms of construction equipment used in the mixing, application, or installation of concrete or other cementitious products.

Briefly described, in a preferred embodiment, the present invention overcomes the above-mentioned disadvantages and meets the recognized need for such a device by providing a method and apparatus for receipt and retention of waste concrete material at a construction site via lightweight and collapsible containers that do not take up a large volume.

According to its major aspects and broadly stated, the present invention in its preferred embodiment is a bag constructed of woven polypropylene having a top opening for receipt of waste concrete therethrough.

More specifically, the present invention is bag-like device that allows water to weep through its containment surface and, thus, reduce the weight of concrete material to

be recycled. For those applications where all the material, including water, must be removed, the present invention utilizes a water impermeable bag or liner as an alternative. This is most typical when waste material occurs on a deck of a building, where water run-off would be unsuitable.

The present invention relates to a device that could be used to collect the discharge of concrete, grout or primer from a concrete ready mix truck, a boom hose, a conveyor, a deck placer, a hopper, or the like. A further embodiment describes a bag that could serve as a containment area under a truck or other concrete applying or mixing apparatus.

Accordingly, a feature and advantage of the present invention is its ability to be utilized with a variety of concrete mixing and delivery apparatuses.

A further feature and advantage of the present invention is that it is easily transported, of low volume and weight, and is suitable for storage on a concrete delivery or mixing truck for use on an as-needed, on-demand basis.

A feature and advantage of the present invention is that it can be used to contain concrete spills, along with hydraulic and oil spills from equipment, thus preventing environmental contamination.

A further feature and advantage of the present invention is ease of manufacture and low cost of production.

A feature and advantage of the present invention is that it is useful either for reclamation of concrete for recycling, or for convenient transport and disposal thereof.

An additional feature and advantage of the present invention is that it is easily moved within, through and/or atop tall buildings during construction thereof.

A further feature and advantage of the present invention is that it easily accommodates uneven terrain and surfaces attendant construction sites.

These and other features and advantages of the present invention will become more apparent to one skilled in the art

from the following description and claims when read in light of the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Having thus described the invention in general terms, the present invention will be better understood by reading the Detailed Description of the Preferred and Alternate Embodiments with reference to the accompanying drawing Figures, which are not necessarily drawn to scale, and in which like reference numerals denote similar structures and refer to like elements throughout, and in which:

FIG. 1 is a perspective view of a prior art device;

FIG. 2 is a perspective view of a concrete reclaim and disposal device according to a preferred embodiment of the present invention;

FIG. 3 is a perspective view of a concrete reclaim and disposal device according to an alternate embodiment of the present invention;

FIG. 4 is a perspective view of a concrete reclaim and disposal device according to a preferred embodiment of the present invention shown below a concrete remixing hopper and ready for installation thereon;

FIG. 5 is a perspective view of a concrete reclaim and disposal device according to a preferred embodiment of the present invention depicting the device installed on a concrete remixing hopper;

FIG. 6 is a perspective view of a concrete reclaim and disposal device according to a preferred embodiment of the present invention installed on the outlet of a hose from a boom truck;

FIG. 7 is a perspective view of a concrete reclaim and disposal device according to a preferred embodiment of the present invention shown installed on the chute of a ready mix truck;

FIG. 8 is a perspective view of a concrete reclaim and disposal device according to a preferred embodiment of the

present invention shown forming a conical shape around a concrete discharge hose;

FIG. 9 is a perspective view of a concrete reclaim and disposal device according to a preferred embodiment of the present invention having reinforcing strips;

FIG. 10 is a perspective view of a concrete reclaim and disposal device according to an alternate embodiment of the present invention;

FIG. 11 is a perspective view of a concrete reclaim and disposal device according to an alternate embodiment depicted in place under a concrete mixing apparatus;

FIG. 12 is a perspective view of a concrete reclaim and disposal device according to an alternate embodiment of the present invention; and,

FIG. 13 is a perspective view of a concrete reclaim and disposal device according to an alternate embodiment of the present invention shown installed on the chute of a ready mix truck.

DETAILED DESCRIPTION OF THE PREFERRED AND ALTERNATIVE EMBODIMENTS

In describing the preferred and selected alternate embodiments of the present invention, as illustrated in the Figures, specific terminology is employed for the sake of clarity. The invention, however, is not intended to be limited to the specific terminology so selected, and it is to be understood that each specific element includes all technical equivalents that operate in a similar manner to accomplish similar functions.

The present invention is suitable for use as a concrete reclamation and disposal device and method at construction sites, wherein the device of the present invention can be easily transported due to its light weight and low collapsed volume.

FIG. 1 shows prior art device **10** utilized for containing residual concrete and concrete-like materials. Prior-art device **10** is a heavy metal, fiberglass or wood shell **50** having support hooks **20a**, **20b**, **20c** and **20d** for lifting and moving.

Prior-art device **10** rests on ground **G**. Residual concrete is allowed to fall by gravity or pumping into bottom **40** of prior-art device **10**. Concrete is retained by walls **30a**, **30b**, **30c** and **30d**, wherein walls **30a**, **30b**, **30c** and **30d** form a perimeter preventing leakage of concrete from prior-art device **10**. Upon completion of filling prior-art device **10**, it may be moved by heavy equipment to trucks that can then return it, along with the concrete within it, for disposal or recycling. Prior-art device **10** is large, heavy and rigid, takes up substantial space within a delivery truck, and adds significantly to the weight to be transported to and from a construction site when utilized for reclamation of concrete.

Referring now to **FIG. 2**, apparatus **100** overcomes the disadvantages of previous equipment, such as, for exemplary purposes only, prior-art device **10**. Apparatus **100** preferably has a prismatic shape preferably defined by first side **180a**, second side **180b**, third side **180c** and fourth side **180d**, top **120** and bottom **110**, which preferably rests on ground **G**. The respective heights of first side **180a**, second side **180b**, third side **180c** and fourth side **180d** are preferably less than or equal to their respective lengths. Opening **130** is preferably centrally formed through top **120** and preferably provides

access to the interior of apparatus **100**. Straps **140a**, **140b**, **140c** and **140d** are preferably attached at edges **155a**, **155b**, **155c** and **155d**, preferably formed between sides **180a**, **180b**, **180c** and **180d**, such that apparatus **100** may preferably be suspended by attachment of straps **140a**, **140b**, **140c and 140d** preferably over posts or hooks located on equipment for mixing, re-mixing or delivery of concrete, or by extension straps located between the equipment and straps **140**. Apparatus **100** is preferably constructed from woven polypropylene and/or any other suitable material, such as, for exemplary purposes only, polyolefins, nylon, and other polymers. In particular, the material chosen must preferably possess sufficient porosity to permit water seepage or weepage therethrough, yet preferably retain concrete pieces and/or particles within the bag. The material must be strong enough to prevent puncture and tearing, and must allow lifting and transport of the concrete-laden device.

Apparatus **100** overcomes the disadvantages of previous equipment, such as prior-art device **10**, by preferably being made of lightweight material and by preferably being collapsible. Apparatus **100** preferably has first side **180a**, second side **180b**, third side **180c** and fourth side **180d**. First

side **180a** preferably has top edge **150a**, side edge **155a**, side edge **155b**, and bottom edge **160a**, wherein top edge **150a** and bottom edge **160a** are preferably of equal or greater dimension than side edge **155a** and side edge **155b**. Second side **180b** preferably has top edge **150b**, side edge **155b**, side edge **155c**, and bottom edge **160b**, wherein top edge **150b** and bottom edge **160b** are preferably of equal or greater dimension than side edge **155b** and side edge **155c**. Third side **180c** preferably has top edge **150c**, side edge **155c**, side edge **155d**, and bottom edge **160c**, wherein top edge **150c** and bottom edge **160c** are preferably of equal or greater dimension than side edge **155c** and side edge **155d**. Fourth side **180d** preferably has top edge **150d**, side edge **155d**, side edge **155a**, and bottom edge **160d**, wherein top edge **150d** and bottom edge **160d** are preferably of equal or greater dimension than side edge **155d** and side edge **155a**. First side **180a** is preferably attached to second side **180b** at edge **155b**. Second side **180b** is preferably attached to third side **180c** at edge **155c**. Third side **180c** is preferably attached to fourth side **180d** at edge **155d**. Fourth side **180d** is preferably attached to first side **180a** at edge **155a**.

Preferably located along periphery **125** formed by sides **180a**, **180b**, **180c** and **180d** are preferably top edges **150a**, **150b**,

150c and **150d**, respectively, wherein top edges **150a**, **150b**, **150c** and **150d** preferably comprise reinforcement strips **151a**, **151b**, **151c** and **151d**, respectively. Additionally, reinforcement strips **190a**, **190b**, **190c** and **190d**, are preferably located around the periphery **127** of hole **130**.

Preferably located within sides **180a**, **180b**, **180c** and **180d** of apparatus **100** are corresponding fold lines **170a**, **170b**, **170c** and **170d**. Apparatus **100** may preferably be collapsed by folding along lines **170a**, **170b**, **170c** and **170d**, such that lines **170a**, **170b**, **170c** and **170d** are folded in towards each other and first top edge **150a** is preferably brought into proximity to first bottom edge **160a**, second top edge **150b** is preferably brought into proximity to second bottom edge **160b**, third top edge **150c** is preferably brought into proximity to third bottom edge **160c**, and fourth top edge **150d** is preferably brought into proximity to fourth bottom edge **160d**. In such a fashion, apparatus **100** is preferably in collapsed form and consumes very little space on, or folded and placed in the cab of, a transport vehicle. When it is desired to utilize apparatus **100**, apparatus **100** is opened and expanded. Upon attaching straps **140a**, **140b**, **140c** and **140d** to equipment posts or hooks, apparatus **100** can be raised to any desired height, but

preferably is positioned such that bottom **110** is retained on ground **G**.

Referring now to **FIG. 3**, an alternative embodiment is shown. This alternative embodiment is substantially similar in construction and material choice to the embodiment of **FIG. 2**, except as provided herein. Apparatus **100** has opening **130** located in top **120**, such that opening **130** is located off-center within top **120**. By positioning opening **130** off-center, apparatus **100** may now be suspended under mixing or delivery equipment having a spout or other opening located away from the central support, wherein the central support can still be provided to apparatus **100** by suspension via straps **140a**, **140b**, **140c** and **140d**.

Referring now to **FIG. 4**, a hopper/agitator **HM** is shown, wherein apparatus **100** is shown preparatory to installation while still in collapsed form on ground **G**. Opening **130** of apparatus **100** will preferably be installed either under clean-out **CO** or on outlet **O** of hopper/agitator **HM**, such that concrete emitting from outlet **O** or clean-out **CO**, after opening door **D** via handle **L**, will preferably fall into opening **130** and preferably be contained within apparatus **100**.

FIG. 5 shows apparatus **100** now raised, expanded and preferably installed under clean-out **CO** of hopper/agitator **HM**, after opening door **D** via handle **L**, wherein straps **140a**, **140b**, **140c** and **140d** of apparatus **100** are preferably attached over posts **P** of hopper/agitator **HM** in order to preferably suspend apparatus **100** under hopper/agitator **HM** such that concrete, either residual or mixed with wash water, will preferably fall through outlet **O** and into apparatus **100** via opening **130** in top **120**.

Apparatus **100** is preferably attached and held in place via support mounts **175a**, **175b**, **175c** and **175d**, wherein support mounts **175a**, **175b**, **175c** and **175d** preferably include loops **177a**, **177b**, **177c** (occluded in drawing) and **177d**, respectively formed therein. Support mounts **175a**, **175b**, **175c** and **175d** are preferably attached to straps **140a**, **140b**, **140c** and **140d** of apparatus **100**, preferably via carabiners or clevises **165a**, **165b**, **165c** and **165d**, respectively, or the like. Having been so attached, support mounts **175a**, **175b**, **175c** and **175d** are then preferably installed over posts **P** of hopper/agitator **HM** preferably by sliding loops **177a**, **177b**, **177c** (occluded in drawing) and **177d** over posts **P**. In such a fashion, apparatus

100 is preferably expanded and held in place below outlet **O** so that concrete and/or water will fall into apparatus **100** and be contained therein. Alternatively, loops **177** may be attached directly to posts **P** via carabiners, clevises, or the like.

FIG. 6 shows apparatus **100** preferably installed over the tip hose **H** of a boom pump truck **BT**, such that when residual concrete is pumped out of hose **H**, it preferably passes through tube **105** into apparatus **100**, which is placed on ground **G** in a suitable location. Tube **105** is held in place on tip hose **H** by removable fastening means **107**, such as, for exemplary purposes only, hook-and-loop fasteners.

During the discharge of concrete into apparatus **100**, excess pressure will be vented through holes **108** in top **120**. Apparatus **100** may be supported and/or transported by means of straps **140a**, **140b**, **140c** and **140d**.

FIG. 7 depicts an alternate embodiment of apparatus **100** installed under chute **S** of a ready mix truck **RT**, such that residual concrete material will fall into apparatus **100** via opening **130** in top **120**, wherein opening **130** is offset from the center of top **120**, and wherein chute **S** of ready mix truck **RT**

is located to the side of the centerline of ready mix truck **RT**. Apparatus **100** is secured under chute **S** of ready mix truck **RT** by use of straps **140a**, **140b**, **140c** and **140d**, wherein straps **140a**, **140b**, **140c** and **140d** include carbiners **195a**, **195b**, **195c** and **195d** located thereon, and wherein carabiners **195a**, **195b**, **195c** and **195d** attach to hooks or rings **K** on spout **S** of ready mix truck **RT**.

Referring now to **FIG. 8A**, in an alternate embodiment of apparatus **100**, tube **105** of apparatus **100** exits top **120** and can be conformed to generally fit over a hose **H**, while apparatus rests on ground **G**. Tube **105** may be secured by fastening means **107**, such as, for exemplary purposes only hook-and-loop fasteners. Straps **140a**, **140b**, **140c** and **140d** may be used to support apparatus **100** and may be used for lifting for transport. During the discharge of concrete into apparatus **100**, excess pressure will be vented through holes **108** in top **120**.

In an alternate embodiment shown in **FIG. 8B**, for use in locations having inadequate vertical space above apparatus **100**, tube **105** of apparatus **100** exits side **180d**, and can be conformed to generally fit over a hose **H**, while apparatus

rests on ground **G**. Tube **105** may be secured by fastening means **107**, such as, for exemplary purposes only hook-and-loop fasteners. Straps **140a**, **140b**, **140c** and **140d** may be used to support apparatus **100** and may be used for lifting for transport. During the discharge of concrete into apparatus **100**, excess pressure will be vented through holes **108** in top **120**.

Referring now to **FIG. 9**, in an alternate embodiment, apparatus **100** has formed therein opening **130** in top **120**, where reinforcing strips **310a**, **310b**, **310c** and **310d** are located between the corners **192a**, **192b**, **192c** and **192d** of top **120** and the corners **193a**, **193b**, **193c** and **193d** of opening **130**, so as to strengthen opening **130** to permit retention of its shape once concrete has entered apparatus **100** and place tension on walls **180a**, **180b**, **180c** and **180d** thereof. More specifically, corner **192a** is located at the juncture of top edges **150a** and **150b** of sides **180a** and **180b**, respectively. Corner **192b** is located at the juncture of top edges **150b** and **150c** of sides **180b** and **180c**, respectively. Corner **192c** is located at the juncture of top edges **150c** and **150d** of sides **180c** and **180d**, respectively. Corner **192d** is located at the juncture of top edges **150d** and **150a** of sides **180d** and **180a**, respectively. Corner **193a** is

located at the juncture of reinforcing strip **190a** with reinforcing strip **190b**. Corner **193b** is located at the juncture of reinforcing strip **190b** and reinforcing strip **190c**. Corner **193c** is located at the juncture of reinforcing strip **190c** and reinforcing strip **190d**. Corner **193d** is located at the juncture of reinforcing strip **190d** and reinforcing strip **190a**.

While resting on ground **G**, apparatus **100** may be held in place under a discharge clean-out or chute via belts **197a**, **197b**, **197c** and **197d**. Belts **197a**, **197b**, **197c** and **197d** are attached to top **120** of apparatus **100** at corners **193a**, **193b**, **193c** and **193d**, respectively. Belts **197a**, **197b**, **197c** and **197d** pass through retainers **198a**, **198b**, **198c** and **198b**, then through straps **140a**, **140b**, **140c** and **140d**. Belts **197a**, **197b**, **197c** and **197d** may be secured via belt loops **199a**, **199b**, **199c** and **199b** to attachment points on a suitable apparatus. Lifting of apparatus **100** may be accomplished by means of straps **140a**, **140b**, **140c** and **140d**. Alternately apparatus **100** may be lifted by means of attachment belts **197a**, **197b**, **197c** and **197d** via belt loops **199a**, **199b**, **199c** and **199d**.

As shown in **FIG. 10**, in an alternative embodiment, apparatus **200** sits on ground **G** and includes side walls **280a**, **280b**, **280c** and **280d** formed therein. Side walls **280a**, **280b**, **280c** and **280d** form an upper enclosure **250**. Lower enclosure **230** is formed by base walls **290a**, **290b**, **290c**, **290d** and bottom **210**, wherein base walls **290a**, **290b**, **290c** and **290d** of lower enclosure **230** preferably are double-walled and may be inflated with air. Following inflation, side walls **280a**, **280b**, **280c** and **280d** may be manipulated to extend upward from base walls **290a**, **290b**, **290c** and **290d**, thus forming an open container having opening **220** therein. In this fashion, base walls **290a**, **290b**, **290c** and **290d** serve to contain any residual concrete and/or water therein, while side walls **280a**, **280b**, **280c** and **280d** help to contain the residual concrete and/or water by directing the residual concrete and/or water into base walls **290a**, **290b**, **290c** and **290d**. Upon setting and/or hardening of the concrete, base walls **290a**, **290b**, **290c** and **290d** may be deflated for further transportation. Apparatus **200** may be constructed of any suitable material, such as, for exemplary purposes only, woven or film polypropylene. In such an embodiment, apparatus **200** is particularly suited for installation under vehicles or mixing/conveying apparatuses as is more fully described below, wherein apparatus **200** provides

containment for any spillage that might occur during normal operation. Apparatus **200** may be suspended from a vehicle or mixing/conveying apparatus via straps **240a, 240b, 240c and 240d**, wherein straps **240a, 240b, 240c and 240d** are located at the tops of the junctures of side walls **280a, 280b, 280c** and **280d.**

Apparatus **200** also may provide anti-sag webs **260a** and **260b**, wherein anti-sag webs **260a** and **260b** are attached to base walls **290a** and **290c.** More specifically, anti-sag web **260a** attaches to base wall **290a** at attachment point **270a** and to base wall **290c** at attachment point **270d.** Anti-sag web **260b** attaches to base wall **290a** at attachment point **270b** and to base wall **290c** at attachment point **270c.**

FIG. 11 shows apparatus **200** installed under hopper/agitator **HM**, or similar truck. Concrete that may spill from hopper/agitator or truck **HM**, or residual concrete that is removed from hopper/agitator or truck **HM** through clean-out **CO**, will be contained by apparatus **200**, thereby preventing environmental contamination. Apparatus **200** is placed on ground **G** in the area where the hopper/agitator or truck **HM** will be stationed. The hopper/agitator or truck **HM** will then

drive onto floor **212** of apparatus **200**, such that the discharge area of hopper/agitator **HM** will be over apparatus **200**. Wall **214** is then inflated to contain any material flow preventing it from exiting apparatus **200**. Upon completion of operations, wall **214** may be partially deflated and hopper/agitator or truck **HM** may then drive away, leaving waste contained within apparatus **200**. Straps **240a**, **240b**, **240c** and **240d** (occluded in drawing) may be used to transport apparatus once it is full and solidified, or otherwise no longer needed.

Turning now to **FIG. 12**, an alternate embodiment of apparatus **100** is shown, wherein top **122** is open. This embodiment is suitable for areas needing a larger entrance for concrete discharge.

FIG. 13 depicts an alternate embodiment of apparatus **100** installed over chute **S** of a ready mix truck **RT**, such that residual concrete material will fall into apparatus **100** via opening **130** in top **120**, wherein tube **105** is extends from the center of top **120** and covers chute **S**, wherein chute **S** of ready mix truck **RT** discharges from rear of ready mix truck **RT**. Apparatus **100** is secured over chute **S** of ready mix truck **RT** by fastening means **107**, such as, for exemplary purposes only,

hook-and-loop fasteners. Apparatus may be transported via use of straps **140a**, **140b**, **140c** and **140d**.

It is envisioned in an alternative embodiment that apparatus **100**, **200** may be fabricated from any porous material that would permit water to seep or weep therethrough, yet be strong and puncture resistent enough to function for the uses and purposes provided herein.

It is further envisioned in alternate embodiments that apparatus **100**, **200** of the present invention may be made from a water impermeable material; or, may be lined, internally or externally, with a water impermeable material; or, may be chemically treated in order to obtain water impermeable characteristics. This would facilitate the capture of priming agent and the first concrete material to pass out of a pump in areas where it would be undesirable for liquid, including water, to exit the bag.

In still further an alternate embodiment, it is envisioned that apparatus **100** could be attached to a support frame, wherein the frame has attachment points for straps **140a**, **140b**, **140c** and **140d** of apparatus **100**, and wherein the

support frame is independent of any other equipment. In such fashion, apparatus **100** would be expanded from its collapsed configuration and straps **140a**, **140b**, **140c** and **140d** would be attached to the support frame, thereby retaining apparatus **100** open and ready to receive discharge of concrete. The supporting frame could be made from any suitable structural material, such as, for exemplary purposes only, metal, plastic, or wood, and could further include webbing supports. Such an embodiment may have application, for example, when used as a bulk ready mix equipment clean-out receiving station, or the like.

It is also conceived that in an alternate embodiment, straps **140a**, **140b**, **140c** and **140d** may be bungee-type cords, springs, resilient rubber cords, or the like.

It is further conceived that straps **140a**, **140b**, **140c** and **140d** could be made of webbing material.

It is still further conceived in an alternate embodiment that apparatus **100** could be generally of round cross-section.

It is still further conceived in an alternate embodiment that apparatus **100** could be of any round-bottomed or generally circular shape, as in, for example, a parachute-like configuration.

It is yet further contemplated in an alternate embodiment that apparatus **100** could be of generally prismatic shape or of generally polygonal cross section.

As has been described with regard to the various embodiments of **FIGS. 2-13**, the present invention is suitable for use in collection of concrete. Accordingly, in use and operation, a source of concrete to be collected is provided. At least one apparatus **100, 200** for containing concrete to be collected is attached to the source. Apparatus **100, 200** may be supported by the source of concrete to be collected, as by hook-and-loop fasteners, clips, clamps, or the like, or may otherwise be oriented under, proximate, or adjacent to the source of concrete to be collected. The concrete to be collected then is allowed or made to flow into apparatus **100, 200** through an opening therewithin.

Having thus described exemplary embodiments of the present invention, it should be noted by those skilled in the art that the within disclosures are exemplary only, and that various other alternatives, adaptations, and modifications may be made within the scope of the present invention. Many modifications and other embodiments of the invention will come to mind to one skilled in the art to which this invention pertains having the benefit of the teachings presented in the foregoing descriptions and the associated drawing Figures. Therefore, it is to be understood that the invention is not to be limited to the specific embodiments disclosed and that modifications and other embodiments are intended to be included within the scope of the appended claims. Although specific terms are employed herein, they are used in a generic and descriptive sense only and not for purposes of limitation. Accordingly, the present invention is not limited to the specific embodiments illustrated herein, but is limited only by the following claims.